

carried by a radial web 43 that is arranged on the end of the tubular threaded nut 44 for driving the spindle 45 which faces the not-shown drum brake. The web 43 is arranged in the housing 35 in a main bearing 46, i.e., it serves as the drive of the planetary gear 50. The entire driving or actuating unit is encapsulated, i.e., protected from the admission of dirt and moisture by means of seals 47 and 48.

The steel cable line 14 is pressed or crimped into the power transmission element that is realized in the form of a spindle 45 in order to additionally seal the electric motor 8, in particular, from the admission of moisture. For this purpose, a conical blind bore 60 is provided inside the spindle 45. The end of the steel cable line 14 is accommodated in this blind bore and secured from separating by means of crimping. In this case, the steel cable line with its plastic sheathing is inserted in the blind bore of the spindle during the crimping process, namely in such a way that a seal that is impermeable to moisture is formed between the plastic sheathing and the conical bore surface. Any moisture that might be present in the steel cable line 14, i.e., between the steel strand and the cable sheathing, consequently cannot be admitted into the interior of the electric motor.

Claims

1. Electromechanically actuated parking brake for motor vehicles, consisting of a drum brake and an actuating unit for actuating the drum brake, wherein the drum brake contains two brake shoes and an expanding lock that cooperates with the actuating unit via a power transmission element, and wherein the actuating unit consists of an electric motor and a reduction gear

arranged between the electric motor and the power transmission element, characterized by the fact that the rotor (12) of the electric motor (8) is realized in hollow or tubular fashion and radially encompasses the reduction gear (9).

2. Electromechanically actuated parking brake according to Claim 1, characterized by the fact that the reduction gear (9) is realized in the form of a spindle drive (16, 17, 28, 29, 51), the spindle (16, 28, 45) of which forms the power transmission element, and the spindle nut (17, 29, 44) of which is connected to the rotor (12, 39) in power-transmitting fashion.

3. Electromechanically actuated parking brake according to Claim 2, characterized by the fact that the spindle drive (16, 17, 51) is realized in self-locking fashion.

4. Electromechanically actuated parking brake according to Claim 2, characterized by the fact that the spindle drive (28, 29, 30) is not realized in self-locking fashion and cooperates with a locking mechanism (31).

5. Electromechanically actuated parking brake according to Claim 4, characterized by the fact that the spindle drive which is not realized in not self-locking fashion consists of a ball screw (28, 29, 30).

6. Electromechanically actuated parking brake according to Claim 4 or 5, characterized by the fact that the locking mechanism (31) is formed by the armature (33) of a magnetic clamp which can be displaced axially to the rotor (12) and, in the currentless state of the electric motor (8), engaged with a friction surface (34) that cooperates with the rotor (12) by means of a spring (32).

7. Electromechanically actuated parking brake according to Claim 7 [sic; 6], characterized by the fact that the

armature (33) is actuated by the magnetic leakage flux generated by the stator (11) of the electric motor (8).

8. Electromechanically actuated parking brake according to Claim 4 or 5, characterized by the fact that the locking mechanism is formed by an electromagnetic braking device that cooperates with the rotor.

9. Electromechanically actuated parking brake according to one of Claims 2-8, characterized by the fact that the spindle (16, 28, 45) is arranged such that it is secured from rotating.

10. Electromechanically actuated parking brake according to one of the previous claims, characterized by the fact that the housing (3) of the actuating unit (2) is realized in the form of a deep-drawn sheet metal part.

11. Electromechanically actuated parking brake according to Claims 9 and 10, characterized by the fact that the housing (3) contains an axial tubular extension (20) that protrudes into the interior of the rotor (12) and accommodates the end of the spindle (16) which faces the expanding lock (5), namely such that the spindle end is secured from rotating.

12. Electromechanically actuated parking brake according to Claim 11, characterized by the fact that the extension (20) has a polygonal inner profile that cooperates with the correspondingly shaped end of the spindle (16).

13. Electromechanically actuated parking brake according to one of the previous claims, characterized by the fact that the rotor (12) is realized in the form of a tubular deep-drawn sheet metal part.

14. Electromechanically actuated parking brake according to Claim 13, characterized by the fact that the rotor (12) forms the spindle nut of the spindle drive.

15. Electromechanically actuated parking brake according to Claim 13, characterized by the fact that a ball screw nut (29) is pressed into the rotor (12).

16. Electromechanically actuated parking brake according to Claim 13, characterized by the fact that permanent magnet segments (13) are bonded onto the surface of the rotor (12).

17. Electromechanically actuated parking brake according to one of the previous claims, characterized by the fact that one end of the rotor (12) is arranged in a fixed bearing (18) that is held in the housing (3) of the actuating unit (2) by rolling up the rotor end.

18. Electromechanically actuated parking brake according to one of the previous claims, characterized by the fact that the end of the housing (3) of the actuating unit (2) which faces away from the drum (7) is closed with a bearing cover (21) that is fixed by rolling up the housing (3).

19. Electromechanically actuated parking brake according to Claim 18, characterized by the fact that the bearing cover (21) accommodates a movable bearing (19), in which the other end of the rotor (12) is arranged.

20. Electromechanically actuated parking brake according to Claim 18 or 19, characterized by the fact that the bearing cover (21) limits a hollow space (22) that serves for accommodating the electronic circuit for controlling the electric motor (8).

21. Electromechanically actuated parking brake according to Claim 18, 19 or 20, characterized by the fact that the bearing cover (21) consists of plastic.

22. Electromechanically actuated parking brake according to one of Claims 18-21, characterized by the fact that a cable

guide (23) is provided in the bearing cover (21), wherein a preferably extrusion-coated connecting line (24) extends through said cable guide.

23. Electromechanically actuated parking brake according to one of the previous claims, characterized by the fact that a steel cable line (14) is arranged between the power transmission element (10, 16, 45) and the expanding lock (5).

24. Electromechanically actuated parking brake according to Claim 23, characterized by the fact that the steel cable line (14) contains a steel strand as well as a plastic sheathing that surrounds the steel strand.

25. Electromechanically actuated parking brake according to Claim 23 or 24, characterized by the fact that the steel cable line (14) is pressed into the power transmission element (10, 16, 45).

26. Electromechanically actuated parking brake according to Claim 25, characterized by the fact that the steel cable line (14) is pressed into a conical bore (60) in the power transmission element (10, 16, 45).

27. Electromechanically actuated parking brake according to one of Claims 23-26, characterized by the fact that the end of the steel cable line (14) which faces the expanding lock (5) is provided with a drawbar eye or a nipple, respectively.

28. Electromechanically actuated parking brake according to one of Claims 23-27, characterized by the fact that the steel cable line (14) is protected by a bellows (15), wherein the end of the bellows which faces away from the expanding lock (5) is realized in the shape of an O-ring and is accommodated by a preferably circular depression (25) provided in the housing (3) of the actuating unit (2).

29. Electromechanically actuated parking brake according to Claim 28, characterized by the fact that the end of the bellows which faces the expanding lock (5) is welded to the plastic sheathing of the steel cable line (14) which surrounds the steel strand, preferably by means of ultrasonic welding.

30. Electromechanically actuated parking brake according to one of the previous claims, characterized by the fact that the electric motor (8) is realized in the form of an electronically commutated electric motor.

31. Electromechanically actuated parking brake according to one of Claims 1-29, characterized by the fact that the electric motor is realized in the form of a DC brush motor.

32. Electromechanically actuated parking brake according to one of the previous claims, characterized by the fact that a planetary gear (50) is functionally arranged between the rotor (39) and the reduction gear (51).

33. Electromechanically actuated parking brake according to Claim 32, characterized by the fact that one end of the rotor (39) is realized in the form of a sun wheel (40) of the planetary gear (50).

34. Electromechanically actuated parking brake according to Claim 32 or 33, characterized by the fact that planet wheels (41) of the planetary gear (50) cooperate with a ring gear (42) formed on the inner side of the housing (35) of the actuating unit (2).

35. Electromechanically actuated parking brake according to Claim 34, characterized by the fact that the planet wheels (41) are arranged on a radial web (43) of the spindle nut (44), and by the fact that the spindle nut (44) cooperates with a radial bearing (46) that is supported on the housing (35) of the